

PATENT APPLICATION
Docket: 14321.78

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:)
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Serial No.: 10/540,734)
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Filed: January 23, 2006)
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Confirmation No.: 9162)
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For: WAVE TRANSMISSION MEDIUM AND)
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SECOND SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. § 1.97

Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313-1450

Sir:

Please find, pursuant to 37 C.F.R. § 1.98(a)(1), the enclosed Form PTO-1449 which contains a list of all patents, publications, or other items that have come to the attention of one or more of the individuals designated in 37 C.F.R. § 1.56(c). While no representation is made that these references may be "prior art" within the meaning of that term under 35 U.S.C. §§ 102 or 103, the enclosed listed references are disclosed so as to fully comply with the duty of disclosure set forth in 37 C.F.R. § 1.56.

Moreover, while no representation is made that a specific search of office files or patent office records has been conducted or that no better art exists, the undersigned attorney of record believes that the enclosed art is the closest to the claimed invention (taken in its entirety) of which the undersigned is presently aware, and no art which is closer to the claimed invention (taken in its entirety) has been knowingly withheld.

In accordance with 37 C.F.R. §§ 1.97 and 1.98, a copy of each of the listed references or relevant portion thereof that is not a US patent document is also enclosed.

Statement of Relevance of References Listed
Unaccompanied by English Translation
Under 37 CFR § 1.98(a)(3)

In accordance with 37 CFR § 1.98(a)(3), the following concise explanation of the relevance of each listed reference that is not in the English language and unaccompanied by a translation into English is provided.

Japanese Publication No. 10-123350: PROBLEM TO BE SOLVED: To obtain endurance to environmental changes and to facilitate the attachment and detachment of a circuit board by forming a common signal part which diffuses and propagates signal light made incident from one signal light input/output part and projects it from the other signal light input/output part. SOLUTION: The light from a laser diode 42a on the circuit board 40 is made incident on an optical transmission layer 21. This light is propagate in polymethyl metacrylate of a photoconductor layer 21, repeatedly scattered by light scattering bodies 21a and diffused on the whole, and detected by a photodiode 42. Thus, the light is transmitted to respective circuit boards 40 and signal light representing an address and signal light representing data are made incident on the same optical transmission layer in time series from the laser diode 42a. The reception side of the data is specified with the 1st address signal light and only the specified circuit board 40 receives the next data signal light. The transmission and reception of the signal light like this are performed in parallel by respective laminated optical transmission layers 21.

Article entitled New Design Method for Low Loss Y-Branch Waveguides: We propose a new method to design low-loss Y-branch waveguides. Previous designing methods are as follows: The shape of branch comes first. Next, parameters describing details of the shape (for example, location, size, and refractive index of microprisms) are determined by ray optics and others. On the other hand, we take quite a different approach. According to the color Helmholtz equation, if one complex field distribution is given, the corresponding distribution of refractive index of complex number is determined uniquely. First, we make up an ideal field distribution for dividing optical waves smoothly. Next, we calculate the refractive index associated with the ideal field. Finally, the imaginary part of the refractive index is set to be zero and its real part is discredited into several values from the practical viewpoint. Our design method gives extremely low loss Y-branch waveguides.

NON-PRIOR ART DOCUMENTS

Attached for the examiner's information is a copy of two Official Notice of Rejections dated March 9, 2007 and March 13, 2007 for Japanese Application Nos. 2003-336527 and 2003-375986, respectively, which relate to the present application.

Dated this 30th day of April 2007.

Respectfully submitted,

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